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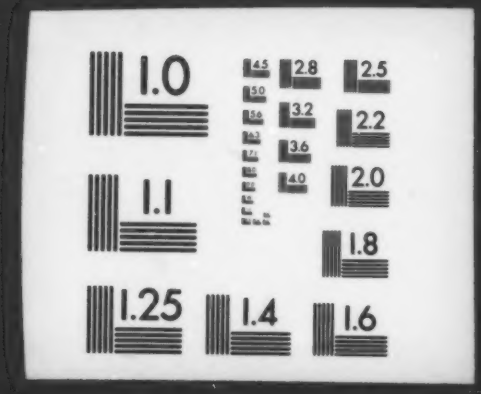

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Economic Analysis of Reporting Forms, Proposed Rule Section 8(a) of TSCA (Toxic Substances Control Act) for Commercial and Industrial Uses of Asbestos

Arthur Young and Co.
Washington, DC

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Economic Analysis of Reporting Forms

Proposed Rule - Section 8(a) Toxic Substances Control Act

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Gross profits of firms by size are examined and the percent impact of the proposed rule determined. For primary processors in the size range of 11 to 30 employees, the economic impact is seen to be roughly 0.1% of gross profits. Impacts are greater for firms of less than 10 employees but these are not required to report under the proposed rule.

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ECONOMIC ANALYSIS OF REPORTING FORMS, PROPOSED RULE SECTION 8(a) OF TSCA FOR COMMERCIAL AND INDUSTRIAL USES OF ASBESTOS

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PREFACE

The attached document is a contractor's study performed with the supervision and review of the Office of Pesticides and Toxic Substances of the U.S. Environmental Protection Agency. The purpose of the study is to analyze the cost and economic impacts of the proposed rule entitled "Reporting Commercial and Industrial Uses of Asbestos." This proposed rule was prepared by the EPA Office of Pesticides and Toxic Substances to partially implement section 8(a) of the Toxic Substances Control Act.

This report was submitted in fulfillment of Research Request Number 3 of Contract Number 68-01-3930, by Arthur Young & Company. Work was completed as of October, 1980.

This report is being released and circulated at approximately the same time as publication in the Federal Register of the proposed rule on reporting Commercial and Industrial Uses of Asbestos under section 8(a) of TSCA. The study is not an official EPA publication. It will be considered along with any comments received by EPA before or during the proposed rulemaking proceedings in establishing final regulations. Prior to final promulgation of this information gathering rule, the accompanying study shall have standing in any EPA proceeding or court proceeding only to the extent that it represents the views of the contractor who performed the study. It cannot be cited, referenced, or represented in any such proceedings as a statement of EPA's views regarding the subject industry or the economic impact of the regulation.

TABLE OF CONTENTS

TITLE PAGE		i
PREFACE		iii
LIST OF TABLES		vii
EXECUTIVE SUMMARY		1
I.	INTRODUCTION	4
	1. BACKGROUND	4
	2. OBJECTIVE AND SCOPE OF THIS STUDY	4
II.	STUDY APPROACH	6
	1. DATA SOURCES	6
	2. TECHNICAL METHODOLOGY	8
III.	STUDY RESULTS AND CONCLUSIONS	15
	1. THE AFFECTED INDUSTRY	15
	2. ESTIMATED REPORTING COSTS AND ECONOMIC IMPACTS	16
IV.	LIMITATIONS OF ANALYSIS	28
APPENDIX		
A.	STATISTICS FOR COMPANIES WITH 10 OR FEWER EMPLOYEES	31

LIST OF TABLES

1. MEDIAN TIME ESTIMATES FOR EPA FORM 7710-36 18

2. MEDIAN TIME AND COST ESTIMATES FOR FORM 7710-36 FOR PRIMARY PROCESSORS 19

3. MEDIAN TIME AND COST ESTIMATES FOR FORM 7710-36 FOR MINERS AND MILLERS 20

4. MEDIAN TIME AND COST ESTIMATES FOR FORMS 7710-36 AND 7710-37 FOR SECONDARY PROCESSORS 21

5. MEDIAN TIME AND COST ESTIMATES FOR FORMS 7710-36 AND 7710-37 FOR BULK ASBESTOS IMPORTERS 23

6. MEDIAN TIME AND COST ESTIMATES FOR FORMS 7710-36 AND 7710-37 FOR IMPORTERS OF ABESTOS MIXTURES OR ARTICLES CONTAINING ASBESTOS 24

7. TOTAL ESTIMATED INDUSTRY IMPACT 26

8. ESTIMATION OF THE ECONOMIC IMPACT FOR REPORTING THE USE OF ASBESTOS AND ASBESTOS MATERIALS - PRIMARY PROCESSORS 27

EXECUTIVE SUMMARY

This report presents estimates of the cost and economic impact of EPA's proposed implementation of the section 8(a) reporting rule on the commercial and industrial uses of asbestos. This regulation is proposed to be implemented in two phases. In the first phase, miners/millers, primary processors and importers of bulk asbestos will report on EPA Form 7710-36. Secondary processors and importers of asbestos mixtures and articles containing asbestos components will also report in this phase but on the much less detailed Form 7710-37. In the second phase, approximately 20% of the respondents in the industry categories that were required to complete Form 7710-37 in the first phase will also report on Form 7710-36. The actual number that will respond to Form 7710-36 in the second phase will be determined after examining the composition of respondents submitting Form 7710-37.

This report also presents a discussion of the major data sources used in developing estimates for this project. Through the utilization of several key data sources (such as the GCA Corporation Master List, listings of primary processors provided by the Research Triangle Institute, the U.S. Bureau of Mines and the Mine Safety and Health Administration, U.S. Customs Service, and the Weston Report[1]) as complete a list as possible of affected firms and establishments was developed and grouped according to industrial category.

Total cost estimates were based on reporting time estimates obtained in a pre-test of EPA Form 7710-36 and standard industrial labor costs. The labor costs were estimated using standard industrial rates which have been utilized in similar analyses. In order to obtain estimates of the time required to complete Form 7710-36, the availability of the requested information and feedback on the clarity of the form, the Institute for Survey Research (ISR) of Temple University conducted a pre-test of the form. Members of the Asbestos Information Association (AIA) participated in the pre-test. The results of this test, presented in Section II of this report, were used by EPA as the basis to estimate the median costs to complete each section of the form. These EPA estimates were used by Arthur Young in determining the cost and economic impacts derived in this report. A description of the methodology and rationale behind these estimates can be found in Section II of this report under "Estimation of Reporting Costs".

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[1] "Technological Feasibility and Economic Impact of OSHA's Proposed Revision to the Asbestos Standard," Roy F. Weston, Inc., March 1976.

The total cost of this proposed regulation to the asbestos industry was estimated to be about $2 million when small businesses (firms with ten or fewer employees) are exempted, and $3.3 million if small businesses are not exempted. Considering only the first phase of the regulation, secondary processors bear the highest total cost as a group ($0.65 million), followed by importers of bulk asbestos ($0.18 million), primary processors ($0.13 million), importers of asbestos mixtures and articles containing asbestos components ($43,800), and miners/millers ($3,600). When the second phase is considered, additional estimated costs of $1.1 million for secondary processors and $45,990 for importers of asbestos mixtures and articles containing asbestos components are incurred.

The economic impact of the implementation of the proposed regulation in terms of cost as a percent of profits could only be determined for the primary processors. Lack of data in the other three industry categories (miners/millers, secondary processors, and importers) did not allow a similar estimation. For primary processors the regulation appears to have a relatively low impact (in terms of cost as a percent of profits) ranging from 0.1% to less than 0.01%.

Since this study relied heavily on inputs from other studies, its results are closely tied to those inputs. The major data sources for this study (the GCA Master List and the ISR Survey) had certain limitations which affected the completeness of this study's results.

The wide range of unit reporting time estimates for EPA Form 7710-36 were based on the variations in responses to the ISR industry survey. This wide range is due, in the opinion of the authors, to uncertainty on the part of the industry as to the specific requirements of certain sections of the form.

During the course of the project, the EPA staff revised the structure and content of several portions of EPA Form 7710-36. Consequently, some of the data obtained by ISR were no longer applicable. The revised sections (Sections G and H of Form 7710-36) had reporting time estimates determined by the EPA staff, based on their general experience with similar forms. In addition, reporting time data for Parts D, E, and F of this form were inadequate because the firms selected by AIA to participate in the pre-test included only one secondary processor and one importer of asbestos mixtures and articles containing asbestos components. Therefore, estimates for Parts D, E, and F were derived by EPA staff based on the estimates for Part C.

It is possible that there was over- or under-identification of the number of firms in the asbestos industry, particularly with respect to secondary processors. The main data source for this study, the GCA Master List, did not attempt to list secondary processors because of the general unavailability of information with which to identify these companies. Identification of secondary processors is one of the primary purposes for the development of the section 8(a) rule. The use of

several data sources facilitated the identification of primary processors and importers. An adjustment, based on the methodology utilized in the Weston report, was the only alternative for the estimation of the number of secondary processors.

Despite the above limitations, this study produced meaningful results. The cost estimates, though subject to a number of qualifications, provide a reasonable basis for judging the overall cost of the proposed action.

I. INTRODUCTION

This chapter discusses the background, scope and objectives of the study. The first section summarizes the requirements of the proposed EPA rule. The second section discusses the objectives of the study and outlines the specific tasks that were performed to fulfill these objectives.

1. BACKGROUND

On October 17, 1979, the Environmental Protection Agency published an Advance Notice of Proposed Rulemaking (ANPR) which would require, under the authority of section 8(a) of the Toxic Substances Control Act (TSCA), the reporting of detailed technical data to EPA by asbestos miners and millers, processors, and importers.

This regulation is intended to be implemented in two phases. In the first phase, miners/millers, primary processors and importers of bulk asbestos will report on EPA Form 7710-36. Secondary processors and importers of asbestos mixtures and articles containing asbestos components will also report in this phase but on the much less detailed EPA Form 7710-37. In the second phase, approximately 20% of the establishments that completed EPA Form 7710-37 in the first phase will also report on EPA Form 7710-36. The types of establishments that will be required to respond on EPA Form 7710-36 in the second phase will be determined after receipt of the data in the first phase. Data on EPA Form 7710-36 (much of which are considered confidential business information and thus not otherwise available) include total amounts and uses of asbestos and asbestos containing materials and articles, employee exposure and monitoring data, and waste disposal and pollution control information. EPA Form 7710-37 requires basic respondent and product identification information.

2. OBJECTIVE AND SCOPE OF THIS STUDY

The overall objective of this study is to analyze and present estimates of the cost and economic impact of the implementation of EPA's anticipated section 8(a) rule requiring reporting of production, exposure and other such information related to asbestos and materials and products with absestos components.

Meeting this objective involved the following:

- Use of the reporting time estimates provided by industry to the Institute for Survey Research (ISR), and use of the Master List of potential respondents to this rule compiled by GCA Corporation (GCA). In addition, other sources of data were reviewed and utilized to provide additional information.

- Industry segmentation by employment size was attempted for all categories, but the nature of the employment data permitted this segmentation only for primary processors. For these industries, the following ranges of firm size were chosen: firms with less than 10 employees, firms with between 11 and 30 employees, firms with between 31 and 50 employees, firms with between 51 and 100 employees, firms with between 101 and 500 employees, firms with between 501 and 1000 employees, firms with between 1001 and 2500 employees, and firms with more than 2500 employees. The industrial categories identified were primary and secondary processors of asbestos, miners and millers, importers of bulk asbestos, and importers of asbestos mixtures and articles containing asbestos components.

- Tabulation of median reporting time estimates provided by ISR and EPA staff. The cost estimates were tabulated for each industry category and, for primary processors, for each employment size category.

- Estimation of economic impact (the total cost of the reporting rule expressed as a percentage of gross profit). Although attempts were made to develop this estimate for all industrial categories, available data only supported estimates for primary processors. For the other categories, estimates of the cost of compliance were developed.

An essential intermediate step in meeting the objective of the study was the development of detailed listings of affected firms and establishments. These listings are by industry category and include any available sales and employment data.

II. STUDY APPROACH

This chapter presents a discussion of the procedures and assumptions used to estimate the cost and economic impact of the proposed reporting regulation. The first section contains a review of the data sources. The specific approaches used in this analysis are presented in the second section with discussions on the categorization and counts of the affected firms, and estimation of unit reporting costs.

1. DATA SOURCES

The final count of United States miners, millers, importers, and processors of bulk asbestos and asbestos products was compiled from the following data sources:

- GCA Corporation's Master List of firms and establishments in the asbestos industry
- Research Triangle Institute's list of primary processor firms and their establishments
- U.S. Customs Service data on importers of bulk asbestos and asbestos mixtures and articles containing asbestos components
- A March 1976 report by R. Weston, Inc. for AIA on the economic impact of OSHA asbestos regulations
- U.S. Bureau of Mines 1979 Annual Asbestos Edit Listing of primary processors.
- Mine Safety and Health Administration (personal communication).

A description of these sources and the type of data obtained is presented below. Some of these documents (such as the GCA Master List, the Weston Report and the RTI Report) are part of the section 8(a) rulemaking public record and are available for inspection and review.

(1) GCA Master List

GCA Corporation compiled a Master List (the purpose of which was to identify the kinds of asbestos processors potentially subject to the rule so that copies of the final rule and form could be mailed to potential respondents) of 2,928 miners, millers, importers, and processors of bulk asbestos and materials containing asbestos from a variety of sources. This list was available on computer tape. Of the total, approximately 2,146 firms were identified from Dun and Bradstreet computerized

listings of establishments for SIC codes 2891 (adhesives and coatings), 2952 (asphalt felts and coatings) 3292 (asbestos products) and 3293 (gaskets, packings, and sealing products).

The remainder of the list, over 700 names, was based on seven other identified sources of information. These sources consisted of the GCA Technology Division "Life Cycle" documents, a Journal of Commerce list of asbestos importers and the following EPA-supplied lists: Asbestos Information Association list, NESHAP (National Emission Standards for Hazardous Air Pollutants) listing from EPA Compliance Data System, NIOSH printout of asbestos-containing products, Bureau of Mines mailing list, A/C Pipe Producers Association members, Friction Materials Standards Institute members.

(2) Research Triangle Institute (RTI)

RTI, as part of the development of an asbestos industry profile, identified 122 establishments (73 firms) as primary processors by type of product line. These firms were identified as being contained in one or more four-digit SIC code areas, (3292, 3293, 3996 and 2661), with the majority being in SIC 3292. SIC codes 3292 and 3293 were previously defined. Of the remaining, SIC 3996 contains linoleum, asphalt-felt base, and other hard surface floor coverings. SIC 2661 contains building paper and building board mills.

(3) U. S. Customs Service

A list of importers of asbestos products was obtained from the U.S. Customs Service. Asbestos imports are declared within ten product categories of the tariff schedule of the U.S., Annotated (518.1100-518.5400). The Customs Service list for approximately 575 firms is not exhaustive as only those articles that are clearly marked as containing asbestos are included. These imported products are coded to distinguish between bulk asbestos, and asbestos mixtures and articles containing asbestos components.

(4) Weston Report

This report, entitled Technological Feasibility and Economic Impact of OSHA's Proposed Revision to the Asbestos Standard, prepared by Roy F. Weston Environmental Consultants - Designers (Weston Report) for AIA in March 1976, was utilized to obtain industry-wide estimates of the number of secondary processors. It provided detailed listings of the type of asbestos products but only an aggregate estimate of the number of establishments. The purpose of the report was to provide estimates of the impact of a 1975 OSHA proposal to lower the asbestos workplace standard.

(5) Mine Safety and Health Administration

The Mine Safety and Health Administration identified five firms operating four asbestos mills and four mines in the U.S.

(6) U.S. Bureau of Mines

The U.S. Bureau of Mines, 1979 Annual Asbestos Edit Listing, identified the names and locations of 128 primary processors of asbestos (6 more than RTI and 89 more than GCA).

This project also required data to be obtained on SIC codes and firm level sales and employment data for facilities identified as processing and importing asbestos mixtures and articles containing asbestos components. The following sources were used in this effort:

- Dun & Bradstreet's Million Dollar and Middle Market Directories. The 2000 and 3000 series for SIC codes 2891, 2962, 3292, 3293 were available on tape from EPA.
- Standard and Poor's Directory.
- Small Business Administration's Share of Market Data.

This effort was partially successful as sales and employment data for the majority of secondary processors were unavailable (because they could not be identified), and were not adequate for importers. Only employment data were available for miners/millers, sales data were not.

The analysis required development of average gross profit percentage (on sales) by SIC code, by employment segment for primary processors (the only industry category for which data were available). In addition to sales, total wages and materials, and value of shipment data were required for the calculation. These data were obtained from the 1972 Census of Manufactures. To confirm no appreciable change in the gross profit percentage figures over time, the results were spot checked against the 1977 Census of Manufactures.

The major input to the development of unit reporting costs was an industry survey of eight respondents performed by the Institute for Survey Research (ISR). These data consisted of estimates of time and the type of personnel required to complete each section of EPA Form 7710-36. EPA, after review of these data, provided median estimates of the hours required to complete the forms (see discussion under "Estimation of Unit Reporting Costs").

2. TECHNICAL METHODOLOGY

Discussion of our approach to the cost and economic impact estimation tasks of this project is in four parts: definition of the affected industries, identification of affected firms that are small

businesses, estimation of unit reporting cost for the various affected industrial categories, and estimation of the economic impacts of the proposed regulation.

(1) Definition of the Affected Industries

The characterization of the affected industries was performed in three steps. First, the establishments of each firm processing, mining, milling or importing asbestos were identified. Second, these firms were identified, wherever possible, according to the size of the firm (total number of employees), into the previously specified segments (less than 10, 11-30, 31-50, 51-100, 101-500, 501-1000, 1001-2500, 2501 and over employees). Third, the firms were grouped into the industrial categories of primary processors, secondary processors, miners/millers, and importers. An EASYTRIEVE program was used to generate many of the lists needed for this task.

. Identification of Number of Plant Sites (Facilities)

The identification of the number of plant sites in each industry category was necessary in order to determine the number of reports which would be required for each category The data sources listed in Section 1 above were used in this effort. Care was taken to avoid double counting of firms and establishments which may be listed on more than one source. Importers were considered at the firm level only (one firm completing one report), so the plant sites were not identified.

To determine the number of plant sites a list of branch sites was generated and manually matched with a listing of firm headquarters to determine the actual number of firms. The financial sources described in the first section were searched to locate headquarters of any unmatched branch sites.

To estimate the number of potential reports the number of firms and plant sites were tabulated. The total number of firms consisted of all firms (independent and headquarters) identified in the category. The total number of plant sites reflects the sum of all branches, independent and headquarter locations. To determine total reports the number of plant sites was adjusted to remove sites at which the relevant industry activity (primary, secondary processing, milling/mining or importing) did not occur.

. Identification of Firms By Size

A grouping of affected firms was performed using total employment as the measure of size. The initial grouping of firms by total number of employees was generated by sorting

the firms listed on the computer tape of firms from Dun & Bradstreet that was originally created for GCA's asbestos industry study.

The list of firms not identifiable from the Dun & Bradstreet computerized list was checked against Dun & Bradstreet's Million Dollar and Middle Market Directories, Standard and Poor's Directory, and the Small Business Administration Share of Market lists to obtain employment data (total employment, or employment for the entire firm, was used as opposed to site employment). When total employment for the firm was determined using the aforementioned financial sources, the firm was included in its proper employment size segment. In cases where total employment data were not available, the firms were placed in an unclassified segment.

Identification By Industrial Category

Since the proposed regulation requires that different asbestos industries provide different information, thus influencing the cost of reporting for each industry, it was necessary to determine the number of firms within these categories: importers, miners/millers, primary processors, and secondary processors. The Master List of asbestos firms provided by GCA was used as the first source of data on these categories, with supplemental information obtained through various other sources: for miners and millers through personal communication with the Mine Safety and Health Administration; U.S. Customs helped identify importers; RTI and the Bureau of Mines assisted in identifying primary processors.

As the number of secondary processors was not adequately identified from any known source, the number of secondary processor establishments was calculated using the methodology of the Weston Report. An average plant site employment was calculated for all secondary processors by sampling from the employment data from firms on the GCA list which were assumed to be secondary processors. That is, they were not positively identified as being primary processors, importers or miner/millers. That average employment was then divided into the total secondary processor category employment (300,000) identified in the Weston Report for the Asbestos Information Association of North America. This resulted in an estimate of the total number of establishments in the secondary processor category.

In summary, the results of efforts to define the affected industry were mixed. Data on primary processors and miners/millers appeared adequate to support employment segmentation. However, data on importers which included a large portion of unclassified firms, and secondary processors were quite inadequate.

(2) Identification of Small Businesses

A definition of small business for this proposed rule which was developed by EPA and is used in this study characterizes firms with 10 or less employees as small. Since small businesses are proposed to be exempt from the proposed regulation, they need to be excluded from the count of affected firms.

The small businesses in the primary processor and mine/mill segments were identified directly from their employment segmentation since relatively complete data were obtained.

In the secondary processor segment, an estimate was made that 40% of the unclassified firms are small firms. The estimate of 40%, which was developed by EPA staff, is based on an analysis by GCA of the types of industries which may process asbestos. GCA identified 54 four-digit SIC codes. EPA used Dun and Bradstreet data to determine the percentages of sales, employees, and establishments in those SIC codes of businesses with ten or fewer employees. These figures were then averaged for all SIC codes. The EPA analysis estimates that while approximately 43% of these firms employ ten or fewer employees, these firms account for less than 3% of the sales and employees in these categories. A detailed report of the analysis can be found in a memo in the public record entitled "Statistics for Companies with Ten or Fewer Employees". (Copy attached as Appendix A)

Due to a number of considerations, an estimate of small businesses was not developed for either importer category. The presence of a large unclassified segment precluded the direct approach used for primary processors and miners/millers. The analysis described above for secondary processors does not apply either since the SIC codes involved cover a much larger range including the 5000 and above series (service and other non-manufacturing industries). There thus does not seem to be a reasonable basis for estimating the number of small businesses for importers.

(3) Estimation of Unit Reporting Costs

We discuss below our approach to estimating unit reporting costs. Separate discussions are provided for each type of reporting form.

. EPA Form 7710-36

EPA Form 7710-36 was pre-tested by eight members of the Asbestos Information Association (AIA). The test was coordinated for EPA by Institute for Survey Research (ISR) of Temple University. The purposes of the pre-test were to obtain feedback on the clarity of the form, the availability of the requested information, and the time required to

complete the form. AIA was asked to select firms from each of the industry segments to be affected by the rule (miners, millers, primary and secondary processors, and importers). A complete description of the methodology and results of the pre-test may be found in the ISR report "Design and Testing of Asbestos Use Reporting Form", which is part of the EPA public record. The results of the pre-test can be examined in Tables 1 and 3.

Since the range of reporting time estimates was very wide in most cases, EPA decided to develop a single median estimate for each section of the form. The median estimate was used for two reasons. First, EPA wanted to incorporate all of the pre-test results since there were few data points in the first place. Second, other measures of central tendency, such as a geometric mean, could be artificially high because of high outlier estimates by a single respondent.

To develop the median estimate for each section of the form, EPA examined the results of the ISR report and tried to find a middle value. Where there was no apparent middle value, EPA estimated the median value. In certain sections where there were few or no estimates from the respondents, EPA estimated the value by comparing the data requirements in the unknown section to the time estimates for similar data in other sections. Thus, the median estimates for Part D, Secondary Processor Production, was derived from the estimates to complete Part C, Primary Processor Production. Parts G and H were substantially revised as a result of the pre-test. After the revisions, EPA developed median estimates of the time required by those sections that are based on estimates in the rest of the form and experience with the costs associated with similar reporting requirements.

Although it is assumed that several personnel categories will be involved in completing EPA Form 7710-36, data from ISR did not provide a detailed labor rate breakdown for different categories (See Table 1). An average labor rate of $30 per hour was derived by EPA staff by assuming costs for middle management (technical) personnel at $30/hour, and by assuming that respondents would expend amounts of technical time, clerical time (less than $30/hour) and legal time (more than $30/hour) so as to average to $30/hour for all labor.

For miners/millers, time estimates were calculated based on the completion time data provided by miners/millers from the ISR pre-test results. This was considered representative since there are only five miners/millers in the United States, and two (40%) of them had served as respondents on the ISR pre-test.

Primary processors, and miners/millers were assumed to be required to report on Sections G-K, with primary processors required to report on Sections A-C, and miners and millers reporting on Sections A and B. Importers of bulk asbestos were assumed to be required to report on Sections A, B, G, H and I.

Primary processors that also import would complete Sections E or F, as would importers who import all types of asbestos products. Further, primary processors who also engage in secondary processing would complete Section D. However, since these proportions are unknown, they have not been factored into the unit costs.

During the second phase of the proposed regulation EPA estimates that a sample of approximately 20% of secondary processors will be required to complete Form 7710-36, Sections A, D, and G-K. EPA further estimates that 20% of importers of asbestos mixtures and articles containing asbestos components will also be required to complete Form 7710-36 during the second phase, reporting on Sections A, E or F (depending on the type of material imported), and G-I.

The unit cost for Form 7710-36 was calculated for each industrial category of the asbestos industry. This was accomplished by adding the costs associated with each section that the particular industry will be required to complete. No information was available to correlate the amount of data required to be provided by firms of various sizes with the amount of time needed to complete the form. This item is discussed in Chapter IV. The resulting unit costs are listed in Tables 2 through 6.

- EPA Form 7710-37

The unit cost for completing Form 7710-37 was estimated to be $120. This estimate is based on the revised version of Form 7710-37, for which no industry time estimates were available. It was assumed that Part 1 of Form 7710-37 would take as much time to complete as the median time estimate for Section A of Form 7710-36, and that the rest of Form 7710-37 would require as much time as the median time estimate for Section B of Form 7710-36. The same $30/hour average rate for all personnel was utilized.

(4) Economic Impact Analysis

The reporting cost of the proposed 8(a) rule was calculated for each industry category. It was estimated as the product of the total number of reports (forms) to be completed by each respondent and the appropriate unit reporting cost. For primary processors the reporting costs were also expressed as a percentage

of gross profit. The unavailability of adequate sales and employment data (section 1 above) precluded analysis of economic impacts in the other industry categories.

Total firm gross profit (see Table 8) was calculated as the product of gross profit percentage and average firm sales times the number of firms in the employment size segment. The gross profit percentage estimation is the ratio of value of shipments minus total wages and materials to value of shipments.

The data were obtained from the Census of Manufactures by 4-digit SIC code. The specific 4-digit SIC codes on which the gross profit percentage data were based were the SIC codes that appeared most prevalent in the industrial category. For primary processors, these were the four SIC codes identified by GCA (SIC codes 3292, 3293, 2891, and 2952).

Within each employment size segment the gross profit percentage was calculated for each of the SIC codes chosen and averaged for the employment size segment. Average annual sales data were calculated by simple averaging of sales data of the affected firms in each employment size segment.

III. STUDY RESULTS AND CONCLUSIONS

This chapter presents and discusses the results of this study of the costs and economic impacts of the implementation of the proposed 8(a) rule on asbestos. The affected industry is described in Section 1. Section 2 presents the estimated reporting costs and economic impacts of primary processors.

1. THE AFFECTED INDUSTRY

This item is discussed separately for the four affected industrial categories (miners/millers, importers, primary processors, and secondary processors).

- **Miners/Millers**

  Five asbestos miners/millers currently operate four mines and four mills in the United States. It appears that there is one very large firm, the rest being much smaller (including one firm that has less than 10 employees). At least one of these establishments is operated on an intermittent basis.

- **Primary Processors**

  There are an estimated 80 primary processor firms (128 establishments) including, at a minimum, 5 firms (7 establishments) that have ten or fewer employees. The number of affected firms and plant sites increases substantially from the 51-100 employees segment (4 firms) to the 101-500 employees segment (17 firms). There is a similarly large increase from the 501-1000 employees segment (2 firms) to the 1001-2500 employees segment (15 firms). The 1001-2500 employees segment also appears to contain the largest number of affected plant sites per firm. The unclassified segment was relatively small for the primary processors, since more detailed information was available for those firms from an ongoing study (RTI) and from the U.S. Bureau of Mines. The unclassified segment may be due, as in the case of importers, to the fact that the establishments are small, relatively new, and branches or subsidiaries of other unidentifiable firms. It is not possible from the available data to infer what their approximate employment size distribution might be.

- **Importers of Bulk and Asbestos Mixtures and Articles Containing Asbestos Components**

There are an estimated 361 firms that import bulk asbestos and an estimated 365 firms that import asbestos mixtures or articles containing asbestos components. Although the importing firms were all identified by name, available data could not support an employment size breakdown of firms. A large portion of each category was unclassified. As these unclassified firms were not listed in any of the standard sources for financial and employment data, they may be small solely owned companies or agents. These firms may also be newly formed firms (not included in the 1979 D&B or S&P lists) or firms related to other corporations, but having different names.

The number of firms importing asbestos mixtures and articles containing asbestos components may be underestimated, as there is no way to identify many of the articles now imported. The reporting costs of this segment may, therefore, be greater than the total cost reported in Table 6.

- Secondary Processors

There are an estimated 8,974 secondary processor establishments, the majority of which are not currently identifiable. Of these establishments, 3,589 are estimated to have less than 10 employees.

2. ESTIMATED REPORTING COSTS AND ECONOMIC IMPACTS

(1) Estimated Reporting Cost

Tables 2 through 6 present the median estimated costs for the different industrial segments affected by the section 8(a) reporting rule. A miner/miller should expect a median cost of $720 and a primary processor a median cost of $1,080. The median estimated cost for secondary processors to complete EPA Form 7710-37 is $120, and the secondary processors selected to complete Form 7710-36 during the second phase should expect an additional median cost of $990. Importers selected for the second phase reporting of EPA Form 7710-36 should expect a median cost of $630, in addition to the initial cost of $120 to complete EPA Form 7710-37.

The estimated total median cost for the asbestos industry to comply with the proposed regulation is $2,120,610, excluding small businesses with ten or fewer employees. This can be broken down by industry as follows (See also Tables 2 through 7):

- Primary Processors (EPA Form 7710-36): $130,680

- Miners/Millers (EPA Form 7710-36): $3,600

- Importers of Bulk Asbestos (EPA Form 7710-36): $184,110

- Importers of Asbestos Mixtures and Articles Containing Asbestos Components, First Phase (EPA Form 7710-37): $43,800; Second Phase (EPA Form 7710-36): $45,990

- Secondary Processors, First Phase (EPA Form 7710-37): $646,200; Second Phase (EPA Form 7710-36): $1,066,230

If small businesses are included, the total estimated median cost to industry is $3,270,000.

(2) Economic Impact on Primary Processors

The economic impact of the implementation of the proposed regulation in terms of cost as a percentage of profits was determined for primary processors. The regulation appears to have a low impact on the over 2,500 employees segment (under 0.01%). The three lowest size categories (11-30, 31-50, and 51-100 employees) appear to be affected to similar extents (0.1%, 0.09%, and 0.08% of gross profits, respectively). The impact decreases considerably from the 51-100 employees segment to the 101-500 employees segment (0.08% to 0.01%) and remains low (.02% or less) for the remaining segments (501-1,000, 1,001-2,500, and over 2,500 employees) (see Table 8).

Since there are insufficient data to characterize the other industry segments which are subject to the rule, gross profit analysis for these segments is not incorporated in this report.

Even though the above analysis was conducted using limited information and information of varying reliability, meaningful results and data were obtained. The primary processor industrial category has been reasonably established in terms of numbers of firms in the category, identification of these firms by name and site, employment size and sales. Also, the cost of reporting and the economic impact of this cost developed for primary processors will aid in the assessment of the potential burden on industry to comply with the proposed rule.

MEDIAN TIME ESTIMATES FOR EPA FORM 7710-36
(All industrial segments except miners/millers)

Section of Form A	Respondents (Hours)[1]						Median time Estimates (hours)[1]
	A	B	C	F	G	H	
A (Identification)	0.17	0.33	0.75	0.5	0.5	1.5	0.5
B (Bulk Asbestos)	0.5	0.42	12.0	3.0	3.0	20.0	3.0
C (Primary Processors)	0.67	14.0	90.0	4.0	1.5	10.0	7.0
D (Secondary Processors)[2]	-	-	-	-	-	-	7.0
E (Importer of Mixtures)[3]	-	-	-	-	-	-	7.0
F (Importer of Articles)[3]	-	12.0	-	-	-	-	7.0
G (Employees)[4]	-	-	-	-	-	-	2.0
H (Exposures)[4]	-	-	-	-	-	-	6.0
I (Emissions)	0.5	0.08	8.0	0.5	-	1.0	0.5
J (Waste and Disposal)	0.17	0.25	24.0	6.0	1.0	8.0	2.0
K (Pollution Control Equip.)	16.0	1.5	60.0	6.0	40.0	8.0	10.0

1/ The time estimates provided by respondents included clerical assistance as part of middle management time for completion. Legal time was not included in any of these time estimates.

2/ No data were obtained by ISR on Section D. Costs were assumed by EPA to be similar for Sections C and D since basic production data should be of the same order of difficulty to obtain for primary (section C) or secondary (section D) processors.

3/ As little data were available on importers, sections E and F are assumed by EPA to be similar to sections C and D.

4/ Sections G and H have been greatly modified since the ISR pre-test. Hence the ISR obtained estimates for these sections no longer apply. EPA staff reestimated the ISR time estimates based on the changes made to the sections and previous experience with similar information.

Source: Time estimates - ISR Report, Design and Testing of Asbestos Use Reporting Form, June 30, 1978.
Median time estimates - EPA

TABLE 2

MEDIAN TIME AND COST ESTIMATES FOR FORM 7710-36 FOR PRIMARY PROCESSORS

Relevant Reporting Section	Median Time Estimates (Hours)	Per Site Cost [2]
A	0.5	$ 15
B	3.0	90
C	7.0	210
G	2.0	60
H	6.0	180
I	0.5	15
J	3.0	60
K	10.0	300
Legal Review of Form	5.0	150
Total	36.0	$1,080

Cost of Form 7710-36 Per Plant Site	Number of Sites [3]	Total Cost To Segment
$1,080	121	$130,680

[1] Primary Processors with integrated secondary processor operations will also report Section D. This quantity is unknown, however, so no estimate of cost is included.

[2] Weighted average hourly cost of $30 is used to reflect combined costs of management, legal and clerical assistance. (Provided by EPA)

[3] Estimate excludes seven establishments which were positively identified as belonging to firms with 10 or less employees. These establishments are exempted from reporting per the small business definition of this rule. This estimate of small businesses is a minimum estimate as there may be firms in the unclassified segment that also qualify as small businesses. These small firms were identified utilizing the methodology previously discussed (pages 13-16) and the financial data sources previously mentioned on page 12.

Note: If the small business exemption were not applied, the cost for primary processors would be 128 establishments at $1,080 per report for a total cost of $138,240.

TABLE 3

MEDIAN TIME AND COST ESTIMATES FOR FORM 7710-36 FOR MINERS AND MILLERS

Relevant Reporting Section	Respondents (Hours) D	E	Median Time Estimates (Hours)	Per Site Cost[2]
A	0.08	0.25	0.2	$ 5
B	0.50	0.33	0.4	13
G	-	-	2.0[1]	60
H	-	-	6.0[1]	180
I	0.08	-	0.08	2
J	0.08	3.0	1.5	45
K	-	9.0	9.0	270
Review of Form			5.0	150
Total			24.0	$720

Cost of Form 7710-36 Per Plant Site	Number Of Sites[3]	Total Cost to Segment
$720	5	$3,600

[1] See footnote 4 of Table 1 for explanation.

[2] Weighted average hourly cost of $30 is used to reflect combined costs of management, legal, and clerical assistance. (Provided by EPA)

[3] Six mine and mill sites are currently active, one of which is exempted from the 8(a) requirement per the small business definition of 10 or less employees. One other mill operates on an intermittent basis. The small firm was identified utilizing the methodology previously discussed (pages 13-16), and the financial data sources mentioned on page 12.

Note: If the small business exemption were not applied, the cost for miners and millers would be 6 establishments at $720 per establishment for a total cost for $4,320.

Source: Respondent time estimates - ISR Report, Design and Testing of Asbestos Use Reporting, June 30, 1978.

TABLE 4

MEDIAN TIME AND COST ESTIMATES FOR FORMS 7710-36 AND 7710-37 FOR SECONDARY PROCESSORS

FORM 7710-37

Section	Median Time Estimates (Hours)1/	Per Plant Cost2/
Part 1	0.5	$ 15
Rest of Form	3.0	90
Legal Review of Form	0.5	15
Total	4.0	$120

Cost of Form Per Plant Site	Number of Sites3/	Cost to Segment
$120	5,385	$646,200

FORM 7710-36

Relevant Reporting Sections	Median Time Estimates (Hours)	Per Plant Cost
A	.5	$ 15
D	7.0	210
G	2.0	60
H	6.0	180
I	.5	15
J	2.0	60
K	10.0	300
Legal Review of Form	5.0	150
Total	33.0	$9902/

Cost of Form Per Plant Site	Number of Sites4/	Cost to Segment
$990	1,077	$1,066,230

Total cost for Secondary Processors:

$ 646,200	EPA Form 7710-37
1,066,230	EPA Form 7710-36
$1,712,430	

1/ EPA Form 7710-37 time estimates were provided by EPA.

2/ Weighted average hourly cost of $30 is used to include costs of management, legal and clerical assistance. (Provided by EPA)

3/ EPA assumed that approximately 40% (out of 8974 establishments) of the secondary processors are small (10 or fewer employees) and exempt from reporting.

4/ Of the secondary processors completing EPA Form 7710-37, approximately 20% will be required, according to EPA, to complete EPA Form 7710-36 during the second phase.

Note:
If the small business exemption were not applied, the cost for secondary processors would be 8,974 establishments at $120 per report for the first phase = $1,076,880 plus 1795 establishments at $990 per report for the second phase = $1,777,050 for a total of $2,853,930.

TABLE 5

MEDIAN TIME AND COST ESTIMATES FOR FORM 7710-36 FOR BULK ASBESTOS IMPORTERS

Relevant Reporting Section	Median Time Estimates (Hours)	Per Site Cost[1/]
A	.5	$ 15
B	3.0	90
G	2.0	60
H	6.0	180
I	.5	15
Legal Review of Form	5.0	150
Total	17.0	$510

Cost of Form 7710-36 Per Plant Site	Number of Sites	Total Cost to Segment[2/]
$510	361	$184,110

1/ Weighted average hourly cost of $30 is used to reflect combined costs of middle management, legal and clerical assistance. (Provided by EPA)

2/ Data were not sufficient to identify small businesses. Due to this limitation and to the possibility that some portion of the identified 361 firms are import agents, (and therefore not required to report), these costs could be overstated.

TABLE 6

MEDIAN TIME AND COST ESTIMATES FOR FORMS 7710-36 AND 7710-37 FOR IMPORTERS OF ASBESTOS MIXTURES OR ARTICLES CONTAINING ASBESTOS

FORM 7710-37

Section	Median Time Estimates (Hours)1/	Cost2/
Part 1	.5	$15
Rest	3.0	90
Legal Review of Form	.5	15
Total	4.0	$120

Cost of Form Per Plant Site	Number of Sites	Cost To Segment
$120	365	$43,800

EPA FORM 7710-36

Relevant Reporting Sections	Median Time Estimates (Hours)	Cost2/
A	.5	$ 15
E or F3/	7.0	210
G	2.0	60
H	6.0	180
I	.5	15
Legal Review of Form	5.0	150
Total	21.0	$630

Cost of Form Per Plant Site	Number of Sites4/	Cost To Segment
630	73	$45,990

Total Estimated Cost to Importers of Asbestos Mixtures or Articles Containing Asbestos:

$43,800	EPA Form 7710-37
45,990	EPA Form 7710-36
$89,790	

1/ EPA Form 7710-37 time estimates were provided by EPA.

2/ Weighted average hourly cost of $30 is used to reflect combined costs of management, legal and clerical assistance. (Provided by EPA)

3/As nonbulk importers could not be broken out into importers of asbestos mixtures and importers of articles containing asbestos components, these segments are considered together as a single segment in the cost analysis. It is recognized that some importers will be required to complete Sections E and F. This number, however, is unknown.

4/Of the importers completing Form 7710-37, approximately 20% will be required, according to EPA, to complete Form 7710-36 during the second phase.

TABLE 7

TOTAL ESTIMATED INDUSTRY IMPACT

Segment	Cost Per Plant Site	Total Segment Cost
Miners/Millers	$ 720	$ 3,600
Primary Processors	$1080	130,680
Secondary Processors Form 7710-37	$ 120	646,200
Secondary Processors Form 7710-36	$ 990	1,066,230
Bulk Importers	$ 510	184,110
Importers of Asbestos Mixtures and Articles Containing Asbestos Components Form 7710-37	$ 120	43,800
Importers of Asbestos Mixtures and Articles Containing Asbestos Components Form 7710-36	$ 630	45,990
Total		$2,120,620[1/]

Form 7710-36 Cost: $1,430,620
Form 7710-37 Cost: $ 690,000

1/ With small business exemption removed, the total cost would increase to $3,270,400.

ESTIMATION OF THE ECONOMIC IMPACT FOR REPORTING THE USE OF ASBESTOS AND ASBESTOS MATERIALS

PRIMARY PROCESSORS

SEGMENT SIZE	GROSS PROFIT PERCENTAGE 1/	AVERAGE SALES (MILLIONS)	GROSS PROFIT (MILLIONS) 2/	NUMBER OF FIRMS	INDUSTRY 3/ SEGMENT GROSS PROFIT	TOTAL NUMBER OF PLANT SITES & REPORTS	TOTAL 4/ SEGMENT COSTS	ECONOMIC 5/ IMPACT (%)
10 or less	29.24	3.32	.97	5	4.85	7	7,560	.16
11 to 30	29.97	3.66	1.10	2	2.20	2	2,160	.10
31 to 50	29.44	4.25	1.25	3	3.75	3	3,240	.09
51 to 100	31.13	4.47	1.39	4	5.56	4	4,320	.08
101 to 500	29.44	50.64	14.91	17	253.47	19	20,520	.01
501 to 1000	17.95	53.00	9.51	2	19.02	2	2,160	.01
1001 to 2500	29.44	62.97	18.54	15	278.10	47	50,760	.02
2500+	29.97	900.76	269.96	7	1,889.72	11	11,880	less than .01
Unclassified				25		33	36,720	
TOTAL				80		128	$131,760 6/	

1/ Gross Profit Percentage = $\frac{\text{Value of Shipments - (Total Payroll + Total Materials)}}{\text{Value of Shipments}}$

2/ Gross Profit = Gross Profit Percentage (Average Sales)

3/ Industry Segment Gross Profit = (Gross Profit) (Number of Firms)

4/ Total Segment Costs = (Total No. of Reports) (Median Cost Per Report). Median Cost Per Report = $1,080.

5/ Economic Segment Impact = $\frac{\text{Total Segment Costs}}{\text{Gross Profit}}$

6/ Costs for Primary Processors with 10 or less employees are excluded per the proposed small business exemption.

Sources

1. GCA Corporation Master List of Asbestos-Processing Firms
2. Research Triangle Institute Study of Asbestos Firms
3. Dun & Bradstreet Middle Market Directory
4. Dun & Bradstreet Million Dollar Market Directory
5. Asbestos Information Association and Institute for Survey Research, Survey of Asbestos Firms
6. Small Business Administration Share of Market Lists
7. 1972 Census of Manufactures
8. Standard & Poor's Directory

IV. LIMITATIONS OF ANALYSIS

The analysis conducted for this study relied heavily on inputs from other studies, hence the results presented herein are closely tied to those inputs. The major sources used have certain limitations which affected the completeness of this study's results.

Three specific areas of limited data sufficiency arose. They are related to the reporting time estimates, identification of the firms in the asbestos industry, and sales and employment figures for firms in the industry.

(1) Unit Reporting Cost Data

The original ISR pre-test consisted of eight asbestos industry firms completing EPA Form 7710-36, answering questions on the clarity of the form, and reporting the time (or estimated time) required to complete each section. Although the pre-test size of eight may not be adequate for analysis purposes, it is to be noted that its primary purpose was to obtain an idea of the clarity of Form 7710-36. Firms were permitted to use "mock" data rather than actual data to complete the form. The use of "mock" data suggests that some of the time estimates provided were speculative, and not based on an attempt to obtain the actual data needed.

The pre-test did not include any research into the time needed to claim confidentiality on EPA Form 7710-36 although the procedures to claim confidentiality are relatively simple and legal review time is included in the estimate.

Reporting times and labor rates for clerical, middle management, and legal/senior management hours were not provided during the pre-test in a complete or consistent manner. As a result, assumptions were made by EPA staff on the amount of clerical and legal time involved in completing the form. Also, standard industrial hourly labor rates had to be used.

The ISR pre-test resulted in a wide range of responses. This was in part related to the clarity of certain sections of the form, a major issue for study in the pre-test. Industry perceived a lack of clarity in the instructions for some sections of Form 7710-36, and thus were unable to provide consistent answers for those sections.

It should be noted that during the course of this project, the structure and content of Form 7710-36 underwent revision by EPA staff. EPA determined median time estimates for those sections which were changed substantially. Time estimates were

also developed by EPA for those sections for which adequate data were collected. Estimates were based on EPA experience with other similar forms. Thus, the time estimates that were used are a mixture of industry and EPA figures.

These variations in the time estimates were eliminated by EPA staff by using the median time estimates for each section.

Due to the limited number of pre-test respondents, it was not possible to conduct any type of correlation analysis.

(2) Identification of Firms in the Asbestos Industry

The GCA Master List was intended to provide a listing of companies who do, or may, process asbestos and is to be used to direct the reporting form to appropriate firms after promulgation of the rule. This list was not intended to be an all-inclusive list of the entire universe of firms in the asbestos industry.

Efforts were made to augment the list by the use of other sources. These included: Research Triangle Institute (RTI) which provided the names of 122 primary processors; the U.S. Bureau of Mines provided a list of 128 primary processors; the Mine Safety and Health Administration provided information on three additional miners/millers; and the U.S. Customs Service identified a large number of firms importing bulk asbestos and asbestos mixtures and articles containing asbestos components.

The identification of all secondary processors is one of the purposes of the section 8(a) rule. An attempt was made to estimate the number of secondary processors for this study by using the total employment figures for secondary processors developed in the Weston Report.

Weston's estimate of 300,000 for total secondary processor employment was based on "a thorough review of all sources," although the Weston Report points out that "the sources of data were not all consistent, and at times differed in their estimate of number of locations." In addition, the Weston Report included wholesalers as secondary processors, contrary to this proposed rule which excludes wholesalers.

(3) Employment and Sales Data

Another major limitation, which precluded developing economic impact estimates for the identified firms, is the unavailability of sales and employment data. There are miners and millers employment data but not sales data; in the importer category there are a large number of firms for which no sales and employment could be identified. Finally, a relatively small number of primary processors remain unclassified as to employment and sales.

APPENDIX A

MEMORANDUM

SUBJECT: Statistics for Companies with 10 or Fewer Employees

FROM: Chemical Information Reporting Branch

TO: The Public Record

Chemical Information Reporting Branch (CIRB) staff prepared the following review of industries to assess the potential impact of a small business exemption on the effectiveness of the proposed section 8(a) asbestos reporting rule. The rule proposes to exempt reports from plant sites that employ ten or fewer employees. A review of the potentially affected industries indicates that under this definition, an average of 43% of the plant sites in each industry would be excluded. However, on the average, those plant sites account for less than 3% of the total annual sales and employees within each industry.

Previous work by an EPA contractor, GCA, identified 54 four-digit manufacturing industries in the Standard Industrial Classification Manual, U.S. Bureau of the Census, in which asbestos may be processed to manufacture an end product (see attached GCA final report titled "Identify Members of the Asbestos Industry"). The purpose of the SIC lists was to provide a very approximate means of identifying the kinds of asbestos processors potentially subject to the rule so that copies of the final rule and form could be mailed to potential respondents. The exercise was necessary because at present only primary processors of asbestos can be identified with any precision. The only available estimate of the number of secondary processors was prepared for the Asbestos Information Association by Roy A. Weston. That report, based

on uncertain data, estimated there were 12,000 secondary processors in 1976. In the section 8(a) proposal, an updated estimate that is based on the same methodology used by Weston indicates there may be almost 9,000 secondary processors. Due to the potentially large number of firms and the absence of any identifying list, GCA prepared the listing of SIC codes to better describe the parameters of potentially affected industries.

To develop the estimated impact of the small business exclusion, CIRB simply totalled the annual sales, number of employees, and number of plant sites for all SIC codes, and then averaged those totals for all SIC codes.

The figures in Table 1 are data from 1975 that were published by Dun & Bradstreet for the Small Business Administration. The first column is a listing of SIC codes from the GCA report. In the second column, the figures describe the percentage of sales by companies in those four-digit SIC dodes who employ 10 or fewer employees. In the third column, the figures describe the percentage of employees who work in companies employing 10 or fewer employees. In the fourth column, the figures describe the percentage of manufacturing establishments in each SIC code which employ 10 or fewer workers.

TABLE 1

SALES AND EMPLOYMENT PERCENTAGES FOR COMPANIES WITH TEN OR FEWER EMPLOYEES IN SELECTED SIC CODES

SIC Code	% of SIC Sales	% of SIC workers	% of SIC firms
2891	3.9	5.7	49
2952	2.8	2.9	38
3292	.2	.3	41
3293	2.9	2.6	34
2261	4.7	2.2	42
2262	2.9	2.6	20
2621	.1	.1	19
2631	.4	.1	37
2645	3.2	3.7	40
2649	4.2	3.6	51
2661	.8	.9	39
2821	1.3	1.5	46
2851	2.9	3.2	61
2899	4.1	5.9	46
2951	14.4	11.4	38
3069	2.2	1.7	45
3079	4.7	4.6	59
3272	6.4	8.8	43
3291	1.5	1.1	39
3295	4.3	4.7	39
3296	.2	.3	41
3433	1.4	1.2	29
3443	1.4	1.2	51
3444	7.4	8.4	73
3482	6.1	4.1	41
3483	.4	.3	57
3484	2.1	2.0	37
3567	3.3	2.8	47
3569	3.5	3.5	31
3612	.1	.1	44
3613	1.2	1.1	39
3621	.2	.2	45
3622	1.2	1.3	41
3623	1.4	2.1	43
3629	2.0	1.7	47
3631	.5	.7	43
3632	.1	.3	45
3634	.6	.5	34
3643	1.0	.6	49
3674	1.4	.9	

3676	4.5	4.3	27
3694	1.0	1.0	50
3699	10.7	9.7	59
3714	.5	.5	45
3724	.1	.1	18
3731	1.3	.3	32
3732	6.8	8.2	67
3743	2.1	.2	30
3751	1.7	2.0	67
3764	.1	.5	33
3769	6.3	5.3	33
3811	2.8	3.2	49
AVERAGE	2.7%	2.6%	42.6%